SUPERFUND COST-SHARING POLICY AND THE EFFICIENCY OF CLEANUP

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This memo presents a brief analysis of the relationship between Superfund cost-sharing policy and the efficiency of the cleanup program. A recent CBO study, *Efficient Investments in Wastewater Treatment Plants*, found that, within limits, the financing needs of municipal sewage treatment plants could be reduced if localities payed a greater proportion of the costs. However, the cost-sharing incentives that were effective for the wastewater treatment program have only limited applicability to the Superfund program as currently structured, since the EPA, not the states or localities, makes the final cleanup technology choices under Superfund. In addition, states now pay 10 percent of the capital costs of waste cleanup under Superfund, but all of the operating costs beyond the first year of operation. This differentiation between capital and operating costs may lead to a state preference for capital intensive cleanup techniques with low operating costs, while the EPA generally prefers containment strategies, which are less expensive initially, but impose significant long-term maintenance costs on the states.

If, on the other hand, the Superfund program were restructured in at least two fundamental ways, increased nonfederal cost sharing could result in a more efficient program. First, to ensure that higher nonfederal cost shares promoted the most efficient types of cleanup, states and/or localities would have to be given more authority to choose the timing and extent of cleanup. Second, a single cost-share breakdown, effective over the life of the cleanup solution, could encourage the most cost-effective remedy by diminishing any biases between capital-intensive and maintenance-intensive solutions. However, this restructured program, in which states and localities pay more, could result in fewer overall cleanups or a concentration of cleanup activity only in areas that could afford to pay the high remedial costs. Also, if sites that posed significant risks to public health were not cleaned up because of local inability to pay, the efficiency of the Superfund program would be reduced.

It should also be noted that other policy changes, not directly related to the state cost-sharing issue, could provide even greater gains in program

efficiency. Two prime examples include promoting more private-party cleanups or enhancing cost recovery efforts from responsible private parties. Such policies remain the most equitable solutions for financing Superfund cleanups. Alternatively, the federal government could pursue a policy of site restoration only to a minimum degree to prevent release of hazardous substances threatening off-site populations. Any further cleanup, enabling local use of the site or its resources, would have to be financed by localities--the primary recipients of the benefits of cleanup. Of course, local government would be free to seek repayments from responsible private parties.

CURRENT SUPERFUND COST-SHARING PRACTICES

Section 104(c)(3) of the original Superfund act clarifies the procedures by which states must share the costs of Superfund cleanups with the federal government. In essence, three conditions must be met: 1/

- The state must agree to pay 10 percent of the costs of remedial cleanup at privately owned sites and 50 percent of the cleanup costs at state-owned sites;

- The state must assure the availability of offsite storage, treatment, or disposal capacity sufficient to handle any materials removed from the site; and

- The state must agree to cover all future operating and maintenance costs of remedial actions.

Other EPA rulings also affect the state cost-share. To eliminate delays experienced during site planning due to state funding shortages, the EPA has waived the state share of planning costs. 2/ The EPA has also extended the federal 90 percent share to cover the first year of operating costs. But after that, the states are still responsible for all the remaining operating expenses for 30 years or more. As a result, CBO estimates that the effective state cost share for an average remedial action site will be about

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1. States may also receive credits toward their required match for documented cleanup expenditures at a National Priority List site, provided that it was made between January 1, 1978, and December 11, 1980.

2. See 40 CFR 30.720(a).

51 percent over the lifetime of the cleanup.[3] Localities are not required either by law or by administrative rule to share in the costs of Superfund cleanups.

SIMILARITIES AND DIFFERENCES BETWEEN THE SUPERFUND AND WASTEWATER PROGRAMS

There are three major contrasts between the Superfund and wastewater programs. First, localities have direct control in choosing cleanup technologies under the wastewater treatment program, but only the EPA can choose the forms of remedial action under Superfund, despite the fact that states will share the costs. A second important difference is that the wastewater treatment program buys a standard level of pollution control. Under current Superfund policies, however, levels of cleanup are not standardized. Finally, both programs seek to abate the costs of pollution imposed on parties who are not responsible for its creation. But in the wastewater case, localities--the subjects of cost-sharing policy--impose these costs on each other. In Superfund, generally the action of a private party--not the localities--imposes pollution costs on others.

These three basic differences between the wastewater treatment and Superfund programs--decision-making authority, cleanup standards, and who pollutes and who pays--may make comparisons between the two programs less compelling.

The Decisionmaking Process

The fiscal pressure put on localities through higher local shares of the costs of wastewater treatment facilities provides an incentive for local decisionmakers to choose the most cost-effective types of treatment. But if localities did not have the authority to make those decisions, the incentives would be ineffective. In the Superfund program, states may make recommendations regarding the choice of cleanup technology. The ultimate

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3. Based on EPA's current planning assumptions of $7.2 million in capital costs per site (federal share of 90 percent) and operations and maintenance requirements of $400,000 per year for 30 years, discounted at a 10.2 percent nominal rate of interest. These cost assumptions have been updated from U.S. EPA, *Extent of the Hazardous Release Problem and Future Funding Needs*, CERCLA Section 301 (a)(1)(C) Study (December 1984).

decision on the type and level of cleanup rests with the EPA, however. Local officials generally have even less influence in the process. Hence, higher state or local cost shares would probably not result in more efficient investments in cleanup projects unless those levels of government were also given a greater role in making the decision over what investments to make.

The Issue of Cleanup Standards

In the case of wastewater, project efficiency can be measured as the amount of wastewater treated to secondary levels divided by the cost of treatment.[4] The EPA established the secondary treatment standard after careful consideration of both the costs of different levels of pollutant removal and the benefits that could be expected in receiving streams. No such standard now exists for cleaning up sites under Superfund.[5] In order to use the cost-sharing incentive to promote an environmentally adequate level of cleanup at less cost, it is essential first to specify the desired level of cleanup.

In the absence of a uniform cleanup standard, increasing the state cost shares could prove counterproductive--the overall level of cleanup could go down for two reasons. First, the Office of Technology Assessment notes that despite the relatively modest 10 percent capital cost contribution, some states are unwilling to meet their share of cleanup costs.[6] Raising that share might lead states to defer further cleanup activities. Second, increasing the state share of Superfund cleanups could bias remedial efforts toward sites that only selected states could afford to clean up, rather than toward those posing the greatest risks to public health.

Who Pollutes and Who Pays

The issue of whether "the polluter pays" provides the most compelling reason why a more efficient program would not necessarily result from

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4. Secondary treatment is a uniform performance standard that calls for 85 percent removal of solid and organic matter from untreated wastewater as well as bacterial disinfection prior to discharge to waterways.

5. The Office of Technology Assessment has identified the lack of cleanup standards as one of the major issues for Congressional consideration. In addition, they have proposed seven alternatives for determining the extent of cleanup at Superfund sites. For details, see Office of Technology Assessment, *Superfund Strategy* (April 1985), pp 112-119.

6. See Office of Technology Assessment, *Superfund Strategy*, p. 24.

increased state cost sharing for the cleanup of uncontrolled sites--indeed, why cost sharing may be inappropriate. In the wastewater program, the federal government chose to share the costs of local treatment plant construction for two reasons. First, even though each local community is responsible for creating the pollution the program was designed to abate, both the costs of that pollution (reduced fish yields, increased costs of drinking water, or reduced recreation opportunities) and the parallel benefits of wastewater treatment flow downstream to other communities who neither caused the problem nor could help pay for the solution. Pollution problems often affect several states that comprise a single river basin. The Congress determined that federal grants could stimulate more effective (but more costly) local treatment that would benefit the entire river basin, rather than accept a lower level of treatment (at less cost, but with only local water quality benefits), that individual communities might choose if left on their own. Second, federal participation in funding local facilities was deemed necessary in order to promptly achieve the Congressionally mandated goal of clean water.

In contrast, most hazardous waste sites were created by the actions of private parties. Higher state or local cost shares cannot be justified on the basis of making the polluter pay. In addition, the benefits of most cleanups accrue largely to a small area within a single state. The federal role as arbitrator of interstate problems is, therefore, not appropriate. Instead, the polluter pays principle, argues that the federal government should focus on policies that would ensure cleanups by responsible private parties to the maximum extent possible.

EFECTS OF SUPERFUND COST-SHARING POLICIES

Although the Superfund program remains in its early stages, two tentative conclusions about the effects of Superfund cost-sharing policies on the cleanup process may be drawn. First, the pace of the cleanup effort may be slowed on occasions by the sporadic availability of state funds for cost-matching. This tendency is most prevalent in smaller states and states with few priority cleanup sites. Second, there may be an inherent bias for states to prefer cleanup technologies with low operation and maintenance costs, since states are fully responsible for these costs. The states' bias may not add to overall program inefficiency, however, since the long-term health effects of the less capital-intensive solutions generally preferred by the federal government are highly uncertain.

State Funding Availability and Cleanup Pace

The availability of state funds to date has slowed the pace of some Superfund cleanups. The EPA has coped with this problem in two ways. First, the agency has waived the state match for planning. Second, they have used the availability of state matching funds to help allocate federal resources to priority cleanup sites; those states with their match ready to go have received the most attention. The EPA will conduct a new survey of state officials this fall to determine the availability of matching funds for fiscal year 1986.

There now exists no mechanism to assure that state funds can or will be made available for Superfund cleanups. Without such a mechanism, and especially in the face of increased cost-sharing demands on states, the EPA may be forced to allocate funds to National Priority List (NPL) sites on the basis of availability, rather than on more preferable criteria such as risk to public health and the environmment. In 1983, for example, 17 states reported no money available for cost sharing under Superfund. 7/ In February 1985 alone, the states of Colorado, Delaware, Louisiana, and Ohio experienced a $3.4 million temporary shortfall in Superfund matching funds.

On the other hand, states with a significant number of NPL sites generally have not been constrained by the current cost-sharing requirements. California voters, for example, have approved a $100 million bond issue to finance cleanups at 49 NPL sites (the state plans to make available about $18 million of these funds for matching purposes) and up to 70 more state-designated sites, for which the state has full financial responsibility. 8/ New Jersey and Massachusetts also have ample funds, with about $100 million and $25 million available, respectively. These funds alone ($143 million) could seed about $1.4 billion in total cleanups--almost the size of the original Superfund enacted in 1980.

State Preference for Low Maintenance Cleanup Technologies

Because states are responsible for only 10 percent of the capital costs of cleanup, but all the future operating costs, it appears that states have the

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7. See Association of State and Territorial Solid Waste Management Officials, *State Cleanup Programs for Hazardous Substances and Spills* (December 21, 1983).

8. See California Department of Health Services, *Expenditure Plan for the Hazardous Substance Cleanup Bond Act of 1984* (January 1985).

incentive to promote capital-intensive, permanent excavation, removal and off-site disposal options. The EPA, on the other hand has established an administrative preference for temporary containment options that cost less initially but require continual maintenance.[9] At issue then is whether the choices preferred by each cost-sharing partner are the most cost-effective ones in the short and long term, and whether decisionmaking authority rests with the appropriate partner.

The following two sections discuss cost-sharing options now under consideration by the Congress and others that could be considered as alternatives.

The Office of Technology Assessment has asserted that the most advantageous program in the near term--perhaps for another 15 years--is preventing the most number of NPL sites from getting worse. The OTA claims that immediate removals and complete remedial cleanups are ineffective for their intended purposes. Containment strategies, which are less costly initially and are designed to prevent migration of hazadous constituents beyond the contaminated region, appear to be well matched to OTA's recommended near-term program. Given the EPA's current containment strategy, it appears that the balance of cost-sharing and decisionmaking now in place may be the most cost-effective approach.

If, on the other hand, states were asked to pay more of the costs of cleanup, it appears advisable that the federal government share not only capital costs, but operating costs as well. This could remove some of the potential bias in state decisionmaking toward capital-intensive solutions, especially if the states were given more authority to make decisions in compensation for having to pay more.

CURRENT CONGRESSIONAL PROPOSALS FOR COST-SHARING UNDER SUPERFUND

Superfund reauthorization bills in both the Senate (S. 51) and the House (H.R. 2817) contain significant changes to current cost-sharing policies. Both would lower the overall costs to the states of Superfund cleanup. At the same time, however, these changes could lead to improved program efficiency by enhancing both federal and state ability to ensure timely and cost-

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9. See Office of Technology, *Superfund Strategy*.

effective cleanup. The CBO has estimated that these changes could save the states, but cost the Superfund, about $240 million over a five-year period beginning in fiscal year 1986. 10/ These monies would presumably be made up by other Superfund revenue sources. 11/

The Senate bill (S. 51) would extend the 90 percent federal share of cleanup costs for five years when pumping and treatment of groundwater is required. It also would redefine the cleanup of groundwater and surface water, either at the contamination site or off-site, as a remedial action (subject to a 90 percent federal share) and not as a maintenance technique (for which federal funds are unavailable) until such time as protection of human health and the environment is assured. The House bill similarly redefines ground- and surface water cleanup, but does not specify any time limit after which the state must assume full responsibility. The House bill, therefore, might extend the 90 percent federal share for the entire life of the treatment. These provisions effectively lower state operation and maintenance costs and lessen any biases against such solutions.

Both bills also would change certain procedures that have caused delays in the cleanup program in the past. States would be allowed to apply credits earned at one site toward the state share at any other site in the state. Current policy allows prior state expenditures at a site to be applied only to the cleanup costs at that site, and then, not in excess of 10 percent. In addition, a 50 percent share would be applicable only for those sites that were owned and operated by the state. Since some state-owned sites were operated by other parties, this new provision would lower overall state exposure in applicable situations. This would correct a history of inaction at state-owned sites.

ALTERNATIVE POLICY OPTIONS

Since recent estimates of the magnitude of future cleanup needs are so dramatic (OTA estimates about $100 billion, for example), the combination of several new revenue measures and program saving efforts will probably

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10. See Superfund Improvement Act of 1985, Report of the Senate Committee on Environment and Public Works, No. 99-11 (March 18, 1985).

11. Under the expiring provisions of the Superfund Act, the majority of Superfund revenues (about $240 million per year) have come from a tax on petrochemical feedstocks. The federal government has contributed only about $44 million per year.

be considered when Superfund is reauthorized. The recent CBO report, *Hazardous Waste Management: Recent Changes and Policy Alternatives* discusses alternative Superfund revenue options in some detail.

This section therefore discusses the range of options designed to enhance the efficiency of the Superfund cleanup program. They are not mutually exclusive, however. They could be considered together as a response to the many efficiency concerns raised in Senator Dole's letter of August 12, 1985.

1. To put into practice the theory supported in the wastewater program--that states (or for that matter, localities) will have the strongest incentive to choose the most cost-effective solution only if they are faced with paying more than a nominal share of the costs incurred as a result of their decision--the Congress could change the payment formula to require the Superfund to pay half the costs of cleanup, the states to pay 40 percent, and localities pay 10 percent. The percent shares would be calculated using effective composite shares, which combine capital and operating costs. One way to handle the financing of cleanup projects would be through trust funds established at the outset of the cleanup and drawn down over the remaining life. The state Superfund program coordinator would make the final decision on cleanup method, based on recommendations from the EPA and from the affected localities. This arrangement would have the advantages of assuring adequate funds for the life of the project without biasing investment decisions toward either low-or high-capital requirement options. In addition, localities--the recipients of most of the cleanup benefits--would, for the first time, share in the costs of providing them.

On the other hand, states and localities may be unwilling or unable to raise sufficient funds to meet their up-front cost shares. Compared to current policy, the states would have to provide less money per average cleanup--40 percent versus the current 51 percent--but they would have to provide the entire amount at the outset of the project, not on an annual basis. Localities would face potentially severe financing requirements for the first time, raising the ability and willingness to pay concerns discussed earlier with respect to the states.

2. Promoting private party cleanups or recovering cleanup costs from parties responsible for site pollution remain the most equitable solutions for financing Superfund cleanups. Shifting the cleanup burden to private parties may also promote greater efficiencies in the cleanup process, by reducing

duplicative feasibility studies and providing strong incentives for cost-effective cleanups. As such, efforts to increase the likelihood of cost recovery should be encouraged.

One way to increase the likelihood of cost recovery and ease the government's litigation burden has been proposed under S. 51. New subsection 107(e) would establish the right of persons held jointly and severally liable under Superfund to seek contributions from other potentially liable parties, especially when the sued party believed it was unfairly shouldering the burden of cleanup costs. This amendment could provide new incentives for greater voluntary contributions and cleanups, by assuring responsible parties' right to seek contributions from other potentially liable parties. The proposal would also expedite suits brought by the federal government. It would delay the rights of sued parties to seek contributions from third parties until after the government-initiated case was resolved. Some larger companies may object to this provision, however, because it transfers to them (from the government) the burden of locating other responsible parties.

3. Finally, the OTA has suggested that one way to help establish cleanup standards would be for EPA or the states to determine--in advance of cleanup--the future use of the site. Sites to be used as drinking water supplies in the future would therefore require more stringent cleanup than if the site was to remain off limits to human use. In the latter case, the appropriate cleanup standard would be simply to prevent migration of contaminants to populations off-site.

Following this logic, the federal government could choose--as national policy--to restore all priority sites to a condition that would prevent release of hazardous substances that could threaten human health or the environment. Any further cleanup, enabling local use of the site or its resources, would be financed by the local government. This approach would act to better match the costs of cleanup with the actual benefits of site restoration. Local areas desiring full restoration of a site would be forced to pay the incremental costs of doing so. (Of course, localities would be free to seek repayments from responsible private parties). In order to implement this approach, however, EPA would need to establish a site classification system, minimum cleanup standards, and maximum population exposure levels, none of which currently exist. Moreover, this option could discriminate against localities that might be unable to afford the high costs of full site restoration.